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**BEFORE THE BOARD OF PATENT APPEALS**
**AND INTERFERENCES**

Application Number: 10/764,938
Filing Date: January 26, 2004
Appellant(s): FATHIMULLA ET AL.

Trevor B. Joike

For Appellant

## EXAMINER'S ANSWER

This is in response to the appeal brief filed 05/22/06 appealing from the Office action mailed 03/14/06.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

| | | |
|---|---|---|
| 5,376,579 | Annamalai | 12-1994 |
| 4,905,075 | Temple et al. | 02-1990 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Annamalai (US pat 5,376,579) in combination with the applicant's admitted prior art (AAPA) of this application and Temple et al. (US pat 4,905,075).

With respect to claims 1, 3, and 4, Annamalai teaches a semiconductor device comprising (see fig. 3, abstract, and associated text):

A high resistivity polysilicon handle wafer or polycrystalline layer 5;

A buried oxide layer 2 over the polysilicon handle wafer or polycrystalline layer; and

A silicon layer over the buried oxide layer.

Further with respect to claims 1, 2, 3, 4, 5, and 6, Annamalai fails to teach that the device has an RF input.

AAPA teaches using high resistivity substrate or wafer to form RF device. See the Background of the Invention on pages 1 and 2 of this application.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to include an RF input on the substrate of Annamalai to form an RF device having reduced losses and cross-talk. See the background of the Invention on pages 1 and 2 of this application.

With respect claims 33 and 35, how the silicon layer is processes or formed has not been given patentability weight since claimed invention is directed to a device.

With respect claims 32 and 34, Annamalai in combination with AAPA fail to teach that the polysilicon handle wafer has a resistivity of greater than $10^6$ ohm-cm.

Temple et al. teach using a polysilicon wafer or handle having a resistivity of greater than $10^6$ ohm-cm to provide a structure that can withstand mechanical shock. See col. 2, lines 1-5 and col. 5, lines 20-35.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to incorporate the teaching of Temple et al. into the structure of Annamalai and AAPA to achieve the above benefit.

**(10) Response to Argument**

In response the appellant's arguments in the first, second, and third full paragraphs on page 5 of the Appeal Brief filed 05/22/06, it is submitted Annamalai patent teaches using a polysilicon as handle layer or wafer (see col. 4, line 45) (note that the reference of layer or wafer are merely different labels or inherent or intended functions of the same structure). Further, it is submitted that the polysilicon handle layer or wafer of Annamalai would inherently have a resistivity

and this resistivity would constitute a high resistivity because "high" is relative and not being limited to a certain value. Further, it is submitted that since the polysilicon wafer of Annamalai is undoped, it must inherently have high resistivity (as compared to the doped polysilicon).

In response the appellant's arguments in the fourth full paragraph on page 5 and the paragraph bridging pages 5 and 6 of the Appeal Brief filed 05/22/06, it is submitted the motivation for forming RF device on a high resistivity wafer or substrate is to form a RF device having reduced losses and cross-talk or noise.

In response the appellant's arguments in the paragraphs on page 6 of the Appeal Brief filed 05/22/06, it is submitted a prior art reference is evaluated by what it suggests to one versed in the art, rather than by its specific disclosure (In re Bozek, 163 USPQ 545 (CCPA 1969)) and a reference is considered not only for what it expressly states, but for what it would reasonbly have suggested to one of ordinary skill in the art (In re DeLisle, 160 USPQ (CCPA 1969)). In this case, Annamalai teaches the structure as recited in present claim 1.

In response the appellant's arguments in the paragraphs on page 7 of the Appeal Brief filed 05/22/06, it is submitted AAPA clearly teaches that forming a RF device on high resistivity substrate or wafer would reduce the losses and noise. See lines 22-25, page 1 of this application.

In response the appellant's arguments in the paragraphs on page 8 of the Appeal Brief filed 05/22/06, it is submitted that Temple et al. teach using polysilicon wafer or substrate having a resistivity of greater than 106 ohm-cm to provide a support structure that can withstand mechanical shock. See the rejection.

In response the appellant's arguments in the paragraphs on page 9 of the Appeal Brief filed 05/22/06, it is submitted that the process limitations of claims 33 and 35 have not been given patentable weight because claimed invention is directed to a device. Note that process limitation does not carry patentability

weight in a claim drawn to a structure or device. In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985).

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Long Pham

Conferees:

Wael Fahmy W.F

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